

# BORSIG

BORSIG  
VALVETECH  
GMBH

## VALVES AND COMPRESSOR PARTS



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# ABOUT BORSIG VALVETECH GMBH

**BORSIG ValveTech GmbH** offers high-pressure control and shut-off valves for extreme operating conditions, a comprehensive valve service and complete solutions for compressor valves.

The design, manufacture and maintenance of high pressure control and shut-off valves as well as compressor valves show the full range of BORSIG ValveTech GmbH.

All our valve solutions are tailor-made for the respective applications and manufactured by the application of duplex, super-duplex and other special materials for extreme operating conditions. With this innovative product range, BORSIG underlines its claim to be one of the leading suppliers of high-pressure control and shut-off valves for extreme operating conditions, in particular on gas compressor and storage stations.

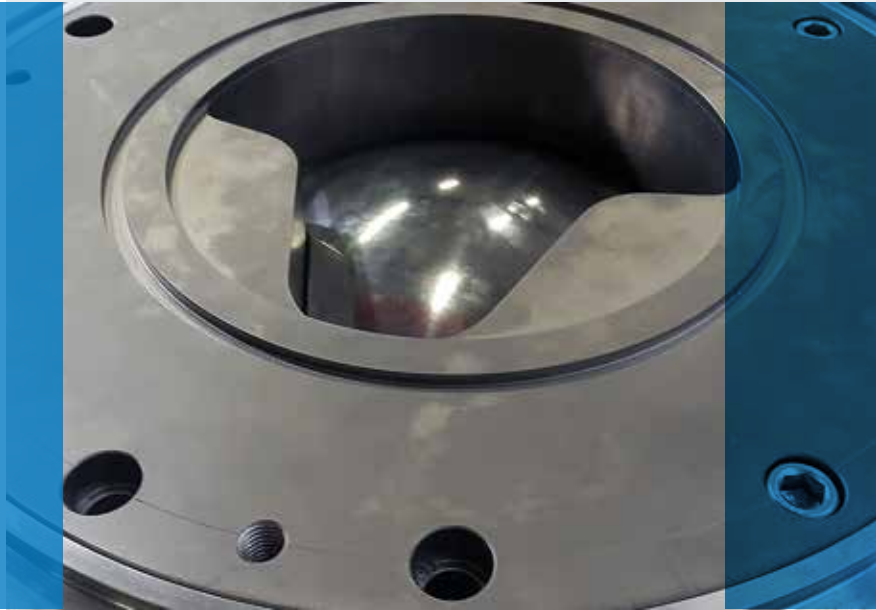
Our compressor valves also underline this claim. Due to the optimal design, desired flow rates and pressures are achieved.

BORSIG ValveTech GmbH stands for innovation, precision, longevity and reliability.

Our product range:

- [Control Ball Valves](#)
- [Isolation and Emergency Shut-off Ball Valves](#)
- [Desuperheaters](#)
- [Compressor Parts](#)
- [Valve Services and Spare Parts](#)

# CONTROL SPHERE®



## CONTROL BALL VALVES

BORSIG ValveTech GmbH offers comprehensive products and service solutions for power generation, the oil and gas industries as well as the chemical and petrochemical industries.

**BORSIG ValveTech GmbH** designs and manufactures high quality trunnion mounted ball valves tailored to your specific control processes by using customized control discs.

Our control valve product line is engineered to suit very high differential pressure applications giving you an exceptionally high rangeability for your plant operation.

### SIZES

NPS 1" - 36"  
DN 25 - 900

### CLASS

ANSI 600 - 2500  
PN 100 - 420

### SEALING SYSTEM

Metal to Metal (MM)  
Primary Metal Secondary Soft (PMSS)  
Soft Seated

### DESIGN

- Split body
- Fully welded
- Top entry
- Trunnion mounted
- Forged or casted Steel



## FEATURES

- Customized control disc for linear, equal percentage or individual control
- Multi-pressure reduction design
- Anti-static design
- Single or double piston
- Double block and bleed
- Anti-blowout stem
- Vent and drain connection
- Emergency sealant injection
- Bi-directional
- Fire safe design



# SUPER- BLOC®

## ISOLATION & EMERGENCY SHUT-OFF BALL VALVES

Today's demand for increased efficiency and flexibility that comes along with higher temperatures, increased pressures and high cycling requires specific engineered valves.

In order to minimize downtime and to ensure maximum safety that calls for 100% system isolation, **BORSIG ValveTech GmbH** offers bubble tight isolation and emergency shut-off valves that are tested to the limit to ensure performance and integrity even under the most challenging conditions.

All of our isolation and emergency shut-off ball valves are coated application-specific for enhanced erosion and corrosion resistance to even withstand acids or caustics.





## FEATURES

- Safety shut-off function
- Fire safe test acc. to API 607 & ISO 10497
- Anti-static design
- Single or double piston
- Double block and bleed
- Anti-blowout stem
- Vent and drain connection
- Emergency sealant injection
- Bi-directional



# DESUPER- HEATERS



## TEMPERATURE CONTROL OF SUPERHEATED STEAM

Steam conditioning plays an indispensable role in today's modern power plants.

**BORSIG ValveTech GmbH** desuperheater solutions have found great acceptance on the market offering state of the art technology for precise steam cooling by water injection.

In order to minimize vaporization distance - crucial for industrial and utility boilers - the nozzle design is optimized for perfect atomization of the cooling media. An integrated ball valve guarantees tight system isolation to reduce the risk of thermal shocks and minimize steam turbine blade wear associated to water accumulation and valve leakages. The massflow of the cooling media is controlled by a unique rotary movement that guarantees optimal cooling injection covering the entire load range.

### FEATURES

- Shut-off function by integrated ball valve system
- Multistage pressure reduction
- Linear, equal percentage or individual control characteristic
- Decreased wear of sealant system due to rotating movement
- Easy maintenance and exchange of spare parts
- Single piece design for maximum mechanical integrity
- No weld joints on pressure retaining components
- No need of additional feed water regulation valve





# VALVE SERVICES

## AND SPARE PARTS

Maintenance, repair and modification



**BORSIG ValveTech GmbH** is an independent spare part supplier for industrial valve parts of all brands. We cooperate with all major OEM`s in order to offer full spare part support for total valve care.

In order to guarantee a quick support of third-party valves we remanufacture components based on sample pieces (reverse engineering). Our many years of experience in the field of ball valves with diameters from 25 to 2,600 mm (DN 1" - 104") enable us to apply our expertise in the maintenance and repair of ball valves, even during plant operation.

In addition, we offer the production and refurbishment of spare parts, such as balls and seat rings using special ball and vertical lathes.



Valves severely damaged by corrosion are refurbished by cladding and hardfacing sealing surfaces including respective PWHT measures in such a way that they are equivalent to new fittings.

For modifications and improvements we feature supports made of PEEK (polyetheretherketone), replacing conventional seal rings by lip seals with preloaded springs. In some cases, existing ball valves can also be upgraded to „Fire Safe“.

In addition, safety valves, control valves, check valves, gate/slide valves and actuators can be repaired and refurbished in our workshops at Gladbeck and Leegebruch.



# OUR PROJECTS

## REFERENCES

for control ball valves  
and isolation and  
emergency shut-off  
ball valves





# COMPRESSOR PARTS

## SMALL COMPONENTS - GREAT IMPACT

Our solution for all gases



**BORSIG ValveTech GmbH**, formerly known as BORSIG Compressor Parts GmbH and COMPART Compressor Technology GmbH, offers the development and production of compressor parts.

Our clients include oil and gas industries, chemical and petrochemical industries, natural gas and offshore industries as well as producers of process gases. With more than 2,500 items in stock, BORSIG ValveTech GmbH always provides flexible and comprehensive solutions.

### PLATE VALVES

Plate valves are universal for all gases and applications. Depending on the operating conditions the valve plates are made from different materials such as PEEK, PA, GFK and steel. The advantage of non-metallic valve plates is a significantly higher durability in the case of liquid hammers e.g. caused by condensates. In addition, our long term of experience has shown that consequential damage to valves, cranks and cylinders is much smaller if non-metallic plates break.

## RING VALVES

Ring valves with high-performance non-metallic valve rings are universal for all gases and applications. The advantage of ring valves is the rotation of the valve rings which results in very uniform wear and self-cleaning effect. Due to their individual motion, rings are especially resistant to liquid hammers.

## ACTUATORS

Actuators are used for suction valve unloading as well as for loading and unloading of clearance pockets for capacity control. We provide customized solutions that meet all applicable safety standards. For example, we manufacture diaphragm and piston actuators which may be operated both directly and indirectly.

## OIL SCRAPER PACKINGS

BORSIG ValveTech GmbH oil scraper packings are used in double-acting reciprocating compressors to wipe the oil from the piston rod when it emerges from the crankcase. The traditional metal oil scraper rings with hose springs have been replaced by elastomers. When changing the oil scraper rings the piston rod does not have to be dismantled since the rings are provided with an incision. The repair can be carried out quickly and easily when reaching the wear limit.

## PISTON ROD SEALS

Piston rod seals have the task of sealing the cylinder chamber at the piston rod passage to the atmosphere (crank end). The design and specification of the dimensions is carried out in relation to the parameters of the compressor, e.g. suction and discharge pressure, medium, etc. Decades of experience and the use of state-of-the-art high-performance sealing elements guarantee good service life and low pressure losses. Should reconditioning of a worn-out piston rod seal be required, the wear signs on the sealing elements and internal parts are to be inspected at manufacturer's plant, followed by remedial actions enabling the repeated service of the restored piston rod seal.



# COMPRESSOR PARTS



## VALVE SERVICE AND MODIFICATION

### VALVE RECONDITIONING

Compressor valves are reconditioned in accordance with specified maintenance intervals. Full efficiency is restored for further use. A reconditioned valve has the same lifetime as a new one. There is no doubt about the price advantage of a reconditioned valve compared to a new one. The robust valves can be refitted over and over before their complete replacement takes place.

### ANALYSIS AND OPTIMIZATION

For almost 120 years **BORSIG ValveTech GmbH** has been analysing hundreds of reciprocating compressors of various manufacturers, many of which fail to reach their optimum operating conditions. Our long term experience has shown that reliable analysis of compressors and valves is often able to solve customers' problems.

### MODIFICATION

If frequent valve damage occurs or if the operator is interested in a higher efficiency of his valves, most valves can be modified or optimized subsequently. As a result, compressor valves rarely need to be replaced by new valves. Often the benefits of high-performance plastics can be used. In most cases modifications can be made during the reconditioning of compressor valves without high additional costs.





## COMPONENTS RECONDITIONING

BORSIG ValveTech GmbH has capabilities to recondition components of reciprocating compressors or to manufacture new ones if required:

- liner press-fit
- crosshead refurbishment
- new crosshead shoes
- new crosshead bolts
- new piston as a welded or single item
- reconditioning of piston rods according to OEM standard.

There are several options for manufacturing of new parts. One possibility is that BORSIG ValveTech GmbH has already an updated manufacturing drawing. Alternatively the drawing is provided by the customer. Another option is the manufacturing of the part according to a sample.

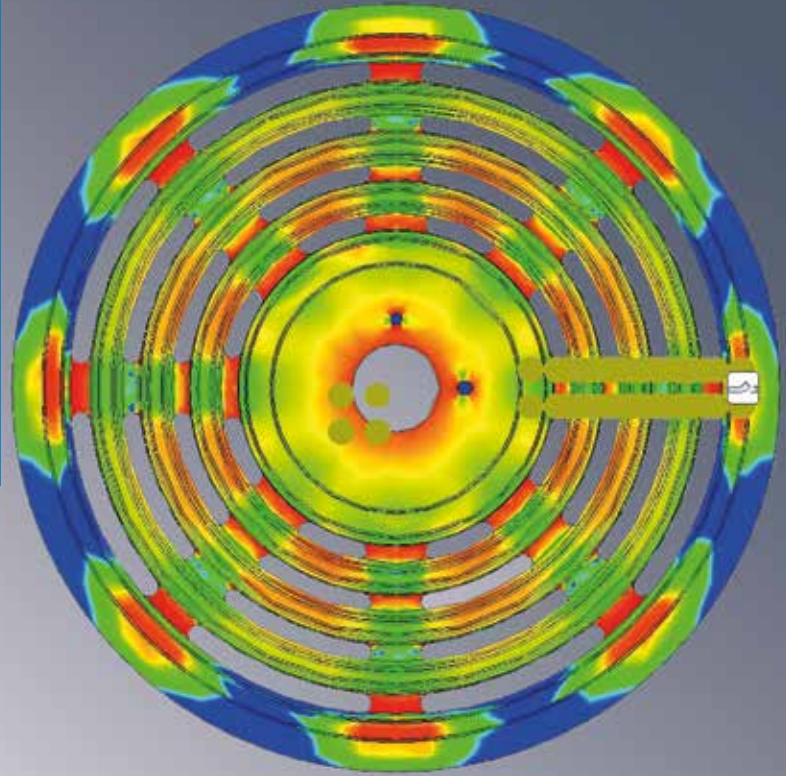
- Simple components are designed / modelled by means of cutting-edge test and measurement equipment.
- Complex components are designed / modelled by means of 3D-graphics.
- Subsequently, our engineering department creates a drawing according to the highest technical requirements. Our latest OEM standards are taken into account.



# COMPRESSOR PARTS

## ENGINEERING AND CONSULTING

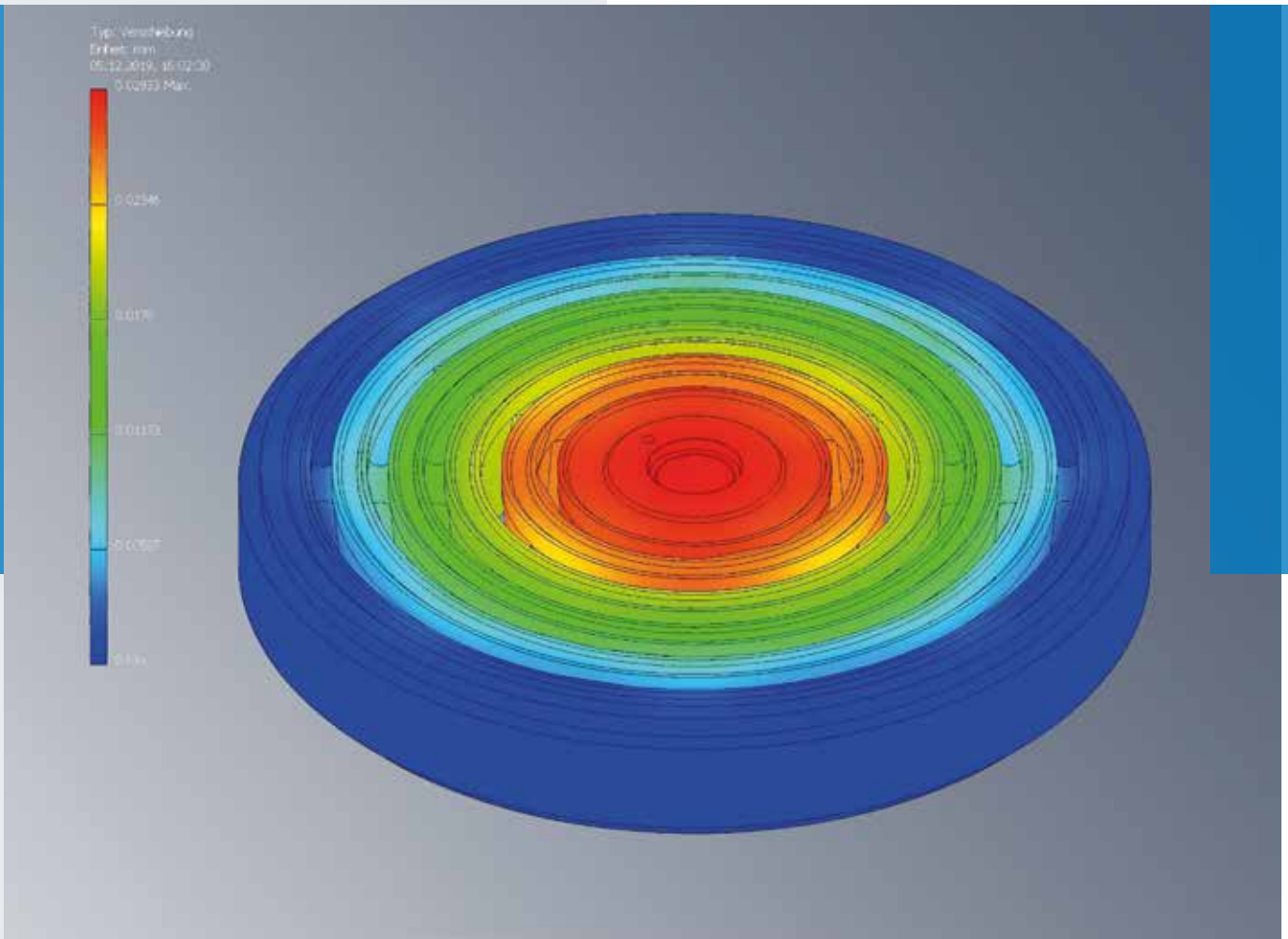
We assist you with resolving particular challenges such as increasing or controlling the capacity of your compressor unit.



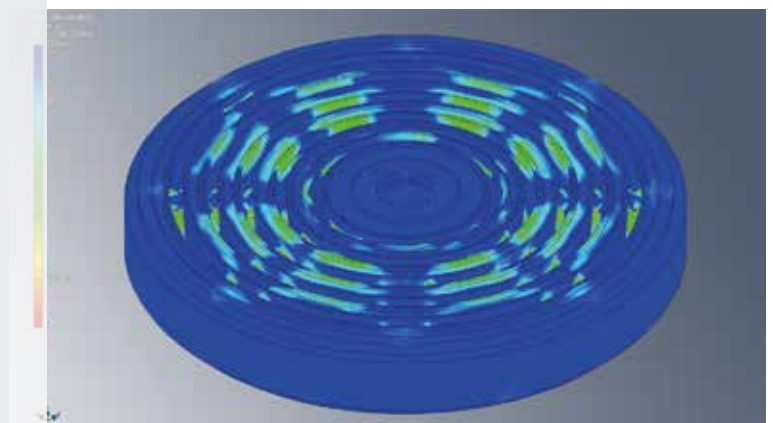
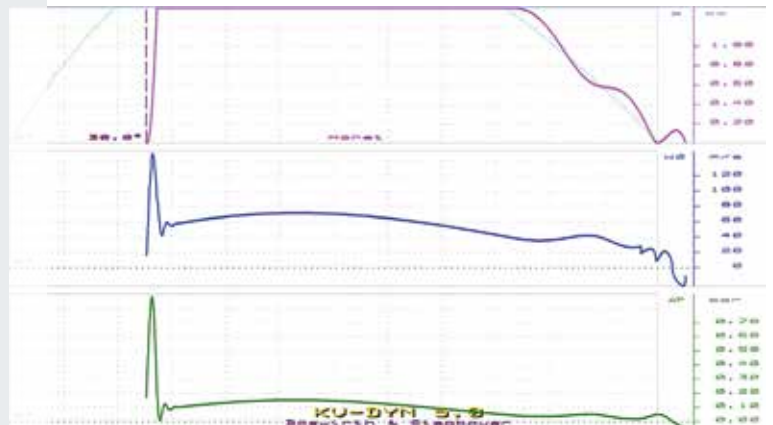
Since 1902 our core competence has been comprehensive analysis of existing compressor and valve problems resulting in tailor-made solutions.

About 35 % of compressor failures are caused by insufficient or inadequate design. In addition, other problems such as excessive pressure losses have been detected during the problem analysis. Excessive loads on the compressor frame and on the piston rod are sometimes unintended consequences.

Calculations by **BORSIG ValveTech GmbH** include design of the compressor parameters, simulation and optimization of valve dynamics as well as the finite element analysis (FEA) of mechanically critical components. Most of the gas- and thermodynamic problems may be analysed by recalculating the compressor, keeping time and effort for problem solving manageable.



In addition to commercially available calculation and analysis programmes, BORSIG VT uses an in-house software for the reconditioning of compressors and valves.



# BORSIG

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